IME 1500: INTRODUCTION TO MANUFACTURING

Professor Fred Sitkins

Credits Hours: 3

Prerequisite: Basic science and mathematics. Students should have a natural curiosity about manufacturing as it relates to their field of study.

Introductory Comments: Much of the information supporting the course description will come from your textbook. The remainder will be covered from additional reading and research sites.

Course Description: Students will learn the analysis and application of a broad range of modern manufacturing techniques utilized in industry. There will be an exploration of production methods as influenced by historical impact, materials, processes productivity, ethics, and social/environmental concerns. The global challenges to product design, performance, quality, and economic considerations will also be investigated.

Office Hours: As posted or by appointment, Professor Sitkins has two offices, Academic Room F-231 and Co-op Advising Office E-111 in the advising suite. He may be in either location depending on daily commitments.

Course Objectives:

Students who successfully complete this course will be able to do the following:

	Course Objectives
1	Understand the scientific principles behind the processes and materials employed in product manufacturing.
2	Understand the basic elements of manufacturing management.
3	Understand the fundamentals of advanced technology systems as they apply to product manufacturing and the associated cost challenges and benefits.
4	Be able to analyze material and process choices during and after the product design cycle.
5	Be familiar with current literature and Internet sources concerning the social and environmental impact of manufacturing.
6	Understand the historical significance of science and technology as it currently applies to global manufacturing economies.
7	Be able to make ethical choices about rights and responsibilities.

Course Conduct:

Students enrolled in this course are expected to:

1. Attend all lectures per schedule.
2. Participate in class discussions and group activities
3. Display a mastery of related research, readings and exam preparation.
4. Complete all written assignments according to prescribed instructions and due dates.

Instructional Materials: *Text,* Schrader, George F. Manufacturing Processes & Materials 4th. Ed., ISBN 0-87263-517-1, Society of Manufacturing Engineers, Dearborn, MI., www.sme.org, 1-800-733-4763.

Selected references:

- Termini, Michael J. The New Manufacturing Engineer Dearborn, MI. Society of Manufacturing Engineers. 1996
- Wright, Kenneth Paul 21st Century Manufacturing upper Saddle River, NJ. Prentice-Hall, Inc., 2001
- Moody, Patricia E., et al. The Technology Machine New York, NY. Simon & Schuster, 1999
- Kibbe, Richard R. Machine Tool Practices 7th edition Upper Saddle River, NJ, Prentice-Hall, Inc. 2001

Periodicals:

You are encouraged to supplement your studies in this course by reading one or more of the following periodicals. You are free to select other technical periodicals of personal interest. Some assignments require such readings.

Abrasives Magazine
Adhesive Age
American fabrics and Fashion
Assembly Engineering
Automotive Engineering
Automotive News
Design News
Designfax
EDM Today
Engineering Materials and Design
Furniture Design and Manufacturing
Industrial Design
Industrial Maintenance & Plant Engineering
InTech
Manufacturing Engineering
Modern Casting
Modern Machine Shop
Motion Control
Plastics Technology
Plastics News
Power Quality Digest
Robotics World
Tooling and Production
Welding Journal
Modern Woodworking

The final course grade is based on the following formula:
Test # 1……150 points
Test # 2……150 points
Test # 3……150 points
Assignments #'s 1 & 2……..75 points total
Assignment # 3 Literature Report……100 points
Assignment # 4 - Non-Trad……100 points
Assignment # 5 – Group project……200 points
Final Examination……75 points
TOTAL 1000 points

Grading Scale:
A = 92 –100 %
BA = 87 – 91 %
B = 82 – 86 %
CB = 77 – 81 %
C = 72 – 76 %
DC = 67 – 71 %
D = 62 – 66 %
E = 0 - 61 %

Standard of Academic Integrity: "You are responsible for making yourself aware of and understanding the policies and procedures in the Undergraduate and Graduate Catalogs that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. [The policies can be found at http://catalog.wmich.edu under Academic Policies, Student Rights and Responsibilities.] If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with your instructor if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test."
Other Information on this subject and other general student codes can be found at:
http://osc.wmich.edu, www.wmich.edu/registrar and www.wmich.edu/disabilityservices

Edited: 11/18/10 DB